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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,684	11/04/2003	James W. Reichard II		2019

7590 03/23/2006  
James W. Reichard II  
5231 Apple Way  
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EXAMINER

JOHNSON, VICKY A

ART UNIT	PAPER NUMBER
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3682

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/699,684

Applicant(s)

REICHARD, JAMES W.

Examiner

Vicky A. Johnson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on 15 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Milton (US 5,417,617) in view of Redmond (US 6,648,784).

Milton discloses a pulley for a pulley and belt transmission system, the belt (20) having grooves defined by a series of angled faces (see Fig 2), the faces having a groove pitch angle (inherent) comprising: a pulley face (see Fig 2); a plurality of teeth (26), having a plurality of pulley tips (see Fig 2), circumferentially around the pulley face (see Fig 2), defined by a series of angled walls (see Fig 3); and at least one surface gap (28) across the plurality of teeth (see Fig 2).

Milton does not disclose the walls having a pulley pitch angle less than the groove pitch angle of the belt.

Redmond teaches the use of a belt drive assembly having a pulley pitch angle less than the groove pitch angle of the corresponding belt (col. 2 lines 21-23).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the transmission system of Milton by making the pulley pitch angle less than the groove pitch angle of the belt in order to reduce noise (col. 1 lines 45-60).

Re claims 2, 3, and 4, Milton discloses the claimed invention as described above, but does not disclose that the pulley pitch angle comprises from about one degree to about 10 degrees less than the groove pitch angle, or the pulley pitch angle comprises from about two degrees to about 8 degrees less than the groove pitch angle, or the pulley pitch angle comprises about five degrees less than the groove pitch angle.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to determine the optimum range of the pulley pitch angle relative to the belt pitch angle, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Re claim 5, Milton shows the pulley tip comprise a flattened shape (see Fig 3).

Re claim 6, Milton shows the at least one surface gap (28) comprises a plurality of grooves, at an angle to the plurality of teeth, through the pulley face (see Figs 2 and 3).

Re claim 7, Milton discloses the claimed invention as described above, but does not disclose from about two to about twenty grooves through the pulley face.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to determine the optimum range of the number of surface gap grooves, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Re claim 8, Milton shows two pulley sides (22, 24), the pulley face there between (see Fig 2) having at least one hole (44, 46) drilled through one of the pulley sides, the at least one hole positioned beneath the pulley face (see Fig 2).

Re claim 9, Milton shows a number of hole pairs (44, 46) drilled through the pulley sides about equal to the number of grooves through the pulley face (see Fig 3).

Re claim 10, Milton shows the hole pairs (44,46) comprise a position proximate to the grooves through the pulley face (see Fig 3).

### ***Response to Arguments***

Some further comments regarding the applicant's remarks are deemed appropriate.

The applicant argues that the combination of the Milton and Redmond references fails to meet the limitations of the claims, because Milton fails to show a plurality of teeth arranged circumferentially around the pulley. Figure 1 of the Milton reference clearly shows a plurality of teeth arranged circumferentially around the pulley. Although the teeth are not identically arranged as the applicant's invention, they do meet the limitation of the claim as written.

It is also argued that the references fail to meet the limitations of the claims, because the Milton reference fails to disclose a surface gap or holes across the teeth. Figure 2 shows a surface gap across the teeth, and Figure 3 shows the holes. It is also argued that Milton discloses holes, grooves, and gaps, but they are used to reduce

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noise and there would be no impetus to modify the belt to obtain the limitations of the present invention. There is no need to modify the Milton device to meet the limitations of the gap, the holes, and the grooves. The applicant's claims are very broad as written and the references meet the limitations of the claims. The applicant has failed to define a particular direction of the gap, the holes and the grooves other than to say that they are "across" the teeth and therefore the references meet the limitations of he claims.

Applicant's argument that the Redmond reference fails to meet the limitations of the claims is incorrect. Redmond clearly teaches that the walls having a pulley pitch angle less than the groove pitch angle of the corresponding belt (col. 2 lines 21-23).

Applicant's remarks have been accorded due consideration however, they are not deemed fully persuasive.

### ***Conclusion***

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of


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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vicky A. Johnson whose telephone number is (571) 272-7106. The examiner can normally be reached on Monday-Friday (7:00a-3:30p).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6217. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Vicky A. Johnson 3/17/84  
Primary Examiner  
Art Unit 3682